

## **REMARKS/ARGUMENTS**

### **The Changes**

Claim 1, the only independent claim, has been changed to better define the disclosed invention as including a non-submersible buoy for continuation floatation on the sea surface.

### **The First Rejection**

Claim 1 has been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,431,589 to Corona.

### **35 U.S.C. § 132 Rationale**

In the opinion of the United States Patent and Trademark Office, the Corona '589 reference discloses a catenary anchor leg mooring system, including a hollow buoy 16, which includes a cylindrical hull portion having a center of gravity which is below the sea surface, ballast compartments 90 having a portion below the sea surface and means for providing a path for oil to travel from subsea reservoirs.

### **Response to the First Rejection**

As argued in the response submitted to the Office Action of September 8, 2004, the Corona '589 reference teaches a submersible buoy. The system described in now amended Claim 1 describes the buoy as being non-submersible for continuation floatation on the sea surface. This change clearly distinguishes the disclosed invention over the teachings of the Corona '589 reference and places Claim 1 in a condition for allowance.

### **The Second Rejection**

Claims 2, 4, and 5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,431,589 to Corona, in view of U.S. Patent No. 4,501,525 to Grundy, *et al.*

### **35 U.S.C. § 132 Rationale**

In the opinion of the United States Patent and Trademark Office in the Corona '589 reference does not disclose the type of ballast used in his chamber at 90. The use of seawater is well known to be a ballasting element. The Grundy *et al.* '525 reference discloses a mooring buoy which is similar to that of the Corona '589 reference and teaches forming a buoy with a configuration having a diameter which is greater than twice its height. In view of these disclosures, in the opinion of the United States Patent and Trademark Office, it would have been obvious to one skilled in the art to make the buoy as taught by the Corona '589 reference with a configuration having a diameter twice as large as the height of the buoy generally, as taught by the Grundy *et al.* '525 reference. Further, to use seawater as the ballast component 90 in the buoy taught by the Corona '589 reference, would have been an obvious matter of design choice to one skilled in the art.

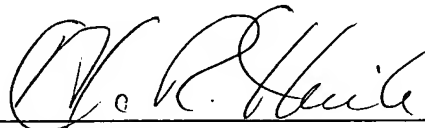
### **Response to the Second Rejection**

As Claim 1 is a condition for allowance, and Claims 2, 4, and 5 all depend from Claim 1, Claims 2, 4, and 5 are also in a condition for allowance.

**CONCLUSION**

The claims, as now amended, are in a condition for allowance. Such action, upon reconsideration of the pending application by the Examiner, is earnestly solicited.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Alan R. Thiele", is written over a horizontal line.

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Attachments



APPENDIX "A"

Replacement Sheet

**CLEAN COPY OF AMENDED CLAIMS**

**WHAT IS CLAIMED IS:**

- 1           1.       *(Twice amended)* A system for stabilizing a floating catenary anchor leg mooring  
2       system used in the production of oil from subsea reservoirs comprising:
- 3                   a non-submersible hollow buoy assembly for continuous floatation on the sea  
4       surface;
- 5                   said non-submersible hollow floating buoy assembly including a cylindrical hull  
6       portion having a center of gravity which is below the sea surface;
- 7                   said cylindrical hull portion further including a ballast compartment having a  
8       portion below the sea surface;
- 9                   said ballast compartment being constructed and arranged to adjust the natural  
10       pitch and roll periods of said non-submersible hollow buoy assembly to reduce pitch and  
11       roll in response to wind and wave forces;
- 12                  means for providing a path for oil to travel from the subsea reservoirs to a tanker.

1           2.     *(Previously amended)* The system for stabilizing a floating catenary anchor leg  
2 mooring system as defined in Claim 1 wherein said ballast compartment is constructed and  
3 arranged to be filled with sea water.

1           3.     *(Canceled)*

1           4.     *(Previously amended)* The system for stabilizing a floating catenary anchor leg  
2 mooring system as defined in Claim 1 wherein said cylindrical hull portion has a diameter which  
3 is greater than two times its height.

1           5.     *(Previously amended)* The system for stabilizing a floating catenary anchor leg  
2 mooring system as defined in Claim 4 wherein said ballast compartment is substantially  
3 cylindrical and follows the circumference of said cylindrical hull portion.